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THE EFFECT OF THE NUMBERED HEAD TOGETHER (NHT) MODEL ON STUDENTS' LEARNING OUTCOMES IN THE MATERIAL OF SPATIAL BUILDINGS IN CLASS V OF SD NEGERI 1 LAMBHEU ACEH BESAR

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ABSTRACT

This research aims to determine the effect of the Numbered Head Together (NHT) model on student learning outcomes in Class V Classroom Building Materials at SD Negeri 1 Lambheu Aceh Besar. The approach used in this research is a quantitative approach to the type of research, namely Quasi Experimental Design with a non-equivalent group design. This research was conducted in class V of SD Negeri 1 Lambheu Aceh Besar which is located on Jalan Krueng Daroy Utama Perumnas Lambheu, Darul Imarah District, Aceh Besar Regency. Sampling used the Total Sampling technique with 28 VA students as the experimental class and 28 VB students as the control class. The instrument used in this research was a 5-item essay test. The data collection technique uses tests in the form of Pretest and Posttest, while the data analysis technique uses SPSS Statistics 22 and hypothesis testing uses the Independent Sample T-Test. The results of hypothesis testing with Independent Sample T-Test statistics obtained a significance value (2-tailed) of 0.00 < 0.05. So the decision making criteria are Ha accepted and Ho rejected. Thus, it can be concluded that there is a significant influence of the use of the Numbered Head Together (NHT) model on student learning outcomes in class V classroom construction material at SD Negeri 1 Lambheu Aceh Besar.
***Keywords**: Numbered Head Together* (NHT), Learning results, Geometry

INTRODUCTION

A curriculum is established to improve the quality of education. Success in education is closely related to the learning process (Wulandari et al., 2023) stated that the learning process is an activity between teachers and students in order to achieve learning goals. The learning process is very important because it affects the aspects that will be learned and developed by students from various subjects including mathematics.

In the realm of education in Indonesia, there have been eleven curriculum changes since 1947, starting from a very simple curriculum to the latest, namely the Merdeka Belajar curriculum. Although there have been a series of curriculum changes, the main goal remains an improvement on the previous curriculum. Each of these changes is the result of policies made by the parties responsible for managing education in Indonesia, especially the Ministry of Education and Culture.(Alam, 2024).

The curriculum is a guideline for organizing learning activities to achieve the given educational goals. The curriculum is narrowly defined as the number of subjects that must be taken or completed by students at school or college. In a broader sense, the curriculum is not only limited to subjects but is more comprehensive. Fauzan & Arifin in (Ahadin et al., 2024)

Mathematics is an important subject to learn because it will be useful throughout life (Adjie et al., 2021). Mathematics learning refers to conceptual learning. A concept is an idea that groups a summary into objects in an example. (Alam et al., 2023) Mathematics is assumed to be a boring subject and is classified as a difficult subject for students to understand and comprehend. Therefore, in mathematics learning, teachers should be able to apply a learning

process that can increase student activity and improve student learning outcomes. According to Suharjana in (Ruqoyyah et al., 2020) A geometric shape is a part of a space that is limited by a set of points found on the entire surface of the shape. The geometric shape discussed concerns the material on the volume of cube and cuboid geometric shapes found in grade 5 of elementary school.

Learning outcomes are the results given to students in the form of assessments after following the learning process by assessing knowledge, attitudes, and skills in students with changes in behavior. According to (Sudjana, 2017) Learning outcomes are the abilities possessed by students after receiving their learning experiences. The achievement of the process can be assessed from the selection of learning models used. In order for students to receive and understand the material given, it is very important to use learning models that can be active, imaginative, creative, and fun during the learning process. (Fisher, 2022)

The Numbered Heads Together (NHT) type of cooperative learning model is one method that can be applied in order to improve student learning outcomes. The Numbered Head Together (NHT) Learning Model is a method developed by Kagan to involve students in gaining their understanding of the material presented in class and can influence interaction patterns. (Jahring, 2020). Numbered Head Together (NHT) learning involves dividing students into small groups, where each group member is given a number. Students work together in groups to solve problems or answer questions, and the group member numbers that must answer are determined randomly. In addition, the Numbered Head Together (NHT) learning model has advantages including being able to improve student learning achievement, being able to deepen student understanding, train student responsibility, make students happy in learning, develop student curiosity, increase student self-confidence, develop a sense of belonging and cooperation, each student is motivated to master the material (Kurniasih & Sani, 2015)

Based on the results of the initial observations the author obtained when conducting observations in class V of SD Negeri 1 Lambheu Aceh Besar showed that the ability of student learning outcomes was still low. This is based on the average value of the students is still below the KKTP (Criteria for Achieving Learning Objectives). Based on this, it can be said that student learning outcomes are still low. One of the causes is the lack of innovation in the mathematics learning process and is not centered on students which makes the learning process monotonous. Therefore, teachers need new breakthroughs so that effective learning can be implemented to improve student learning outcomes. The solution is to apply an innovative learning model that can make it easier for students to understand the learning material. One learning model that can overcome this problem is the Numbered Head Together (NHT) model. This NHT type places students as an active part in the learning process, with the aim of encouraging collaboration, social interaction, and the formation of social and academic skills. Therefore, the researcher raised one title to be studied, namely: **The Effect of the Numbered Head Together (NHT) Model on Student Learning Outcomes in the Material of Spatial Buildings of Class V SD 1 Lambheu Aceh Besar.**

RESEARCH METHODS

This study uses a quantitative approach. The type of research used is Quasi Experiment Design with a non-equivalent control group design. The location of the study was at SDN 1

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Lambheu Aceh Besar. The population of this study was all fifth grade students of SDN 1 Lambheu Aceh Besar. The sample in this study was 28 class VA students consisting of 15 males and 13 females as the experimental class and 28 class VB students consisting of 16 males and 12 females as the control class.

The instrument used in this study was a test instrument consisting of 5 descriptive questions while the data collection technique in this study was a test conducted in the experimental and control classes, with each class given the same pretest and posttest questions. Data analysis techniques through Normality Test, Homogeneity Test, and Hypothesis Test. In this study, the hypothesis analysis used an independent sample t-test (t-test) assisted by the SPSS 22 program.

RESULTS AND DISCUSSION

Research Result Data

The data in this study were obtained from the results of the pretest and posttest given to students in the experimental class and control class at the beginning and end of the meeting. Data on the learning outcomes of students in class VA and VB of SD Negeri 1 Lambheu Aceh Besar are presented in Tables 1 and 2 below.

Table 1 Results of Pretest and Posttest of Experimental Class

No test	experimental class			No test	experimental class		
	Name	Pretest	Posttest		Name	Pretest	Posttest
1.	AZ	40	60	15.	MRA	50	100
2.	AKH	60	80	16.	MAR	40	80
3.	AMP	30	60	17.	MBF	60	100
4.	ARR	70	100	18.	MAN	30	70
5.	AY	60	100	19.	MAA	70	100
6.	BTP	50	80	20.	MSF	20	60
7.	DRS	20	70	21.	PA	60	100
8.	DAZ	50	90	22.	PNA	20	70
9.	DRP	70	100	23.	SF	40	80
10.	FG	60	90	24.	SRA	50	90
11.	FP	20	60	25.	TAG	30	70
12.	HN	30	70	26.	ZN	50	90
13.	JA	40	90	27.	ZA	50	80
14.	KA	50	90	28.	ZU	30	80
Amount						1260	2310
average						45	82,5

Table 2 Pretest and Posttest Results of Control Class

No test	Control Class			No test	Control Class		
	Name	Pretest	Posttest		Name	Pretest	Posttest
1.	AC	50	70	15.	FA	20	40
2.	APB	30	30	16.	FR	50	60
3.	AF	40	60	17.	MAR	20	40
4.	AA	20	50	18.	MAM	40	50
5.	AAN	50	60	19.	MAZ	60	70
6.	AHR	20	40	20.	MAB	50	60

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7.	AZ	30	50	21.	MDG	30	40
8.	AA	40	50	22.	MNA	50	70
9.	AAF	50	60	23.	MSA	50	60
10.	ARR	30	50	24.	NA	40	40
11.	AK	40	60	25.	OA	30	50
12.	CDW	60	80	26.	PA	70	80
13	FP	40	50	27.	RF	30	50
14	FS	40	60	28.	SH	40	60
amount						1120	1540
Avarage						40	55

Based on the table above, it can be seen that the average pretest of the experimental class is 45 with a maximum value of 70 and a minimum value of 20. The average posttest value of the experimental class is 82.5 with a maximum value of 100 and a minimum value of 60. While in the control class, the average pretest is 40 with a maximum value of 70 and a minimum value of 20. The average posttest value of the control class is 55 with a maximum value of 80 and a minimum value of 30. It can be seen that there is a difference between the posttest values of the experimental class and the control class, namely the increase in student learning outcomes in the experimental class.

Research Data Analysis

Normality Test

The normality test is carried out to determine whether the sample being studied is normal or not. (Sugiyono, 2021) The normality test was carried out using the Test of Normality test with the decision rule α > 0.05, so it can be said that the data is normally distributed as seen in Table 3.

Table 3 Normality Test Results

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelas	Statistic	Df	Sig.	Statistic	Df	Sig.
Hasil Belajar	Kelas Eksperimen	.162	28	.057	.929	28	.058
	Kelas Kontrol	.137	28	.194	.943	28	.136

a. Lilliefors Significance Correction

Source: Ouput SPSS 22

The basis for decision making in the Shapiro-Wilk normality test is as follows

1. If the significance value (sig) > 0.05 then the data is normally distributed.
2. If the significance value (sig) < 0.05 then the data is not normally distributed.

Based on Table 3, the following results were obtained:

1. The learning outcomes of the experimental class have a significance (sig) of 0.058 > 0.05
2. The learning outcomes of the control class have a significance (sig) of 0.136 > 0.05

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The significance results of the test result data given to the experimental class and control class are greater than 0.05. So it can be concluded that the research data is normally distributed.

Homogeneity Test

This homogeneity test is used to determine whether the two population groups are homogeneous or heterogeneous, namely testing the equality of the variations of two or more distributions. Data will be said to be homogeneous or heterogeneous can be seen in Table 4.

Table 4 Results of Homogeneity Test

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Hasil Belajar	Based on Mean	1.115	1	54	.296
	Based on Median	.828	1	54	.367
	Based on Median and with adjusted df	.828	1	53.392	.367
	Based on trimmed mean	1.142	1	54	.290

Source : Output SPSS 22

The basis for decision making in homogeneity testing is:

1. If the significance (sig) based on mean > 0.05 then the data is homogeneous.
2. If the significance (sig) based on mean < 0.05 then the data is not homogeneous.

Based on Table 4, it was found that the significance value (sig) based on mean was 0.296 > 0.05, which means it can be concluded that the research data is homogeneous.

Hypothesis Test

Hypothesis testing is a decision-making method based on statistical data analysis. The hypothesis test of this study uses the Independent sample t-test (t-test). The study will be said to be successful if the hypothesis test produced α <0.05 then, Ho is rejected and Ha is accepted. While the hypothesis that α > 0.05 then it can be said that the study was unsuccessful or Ho was accepted and Ha was rejected. The data can be said to be successful or not can be seen in Table 5.

Table 5 Results of Independent Sample t-test

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Hasil Belajar	Equal variances assumed	11.552	.001	10.599	54	.000	46.146	4.354	37.417	54.875
	Equal variances not assumed			10.599	41.978	.000	46.146	4.354	37.360	54.932

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Source Output SPSS 22

Based on the hypothesis results in Table 5 using independent sample t-test, the P-value is 0.000 which is <0.05. Thus Ho is rejected and Ha is accepted. Therefore, it is concluded that there is an influence of the Numbered Head Together model on student learning outcomes in the material of Class V Space Structures at SDN 1 Lambheu Aceh Besar.

Discussion

This study was conducted to determine the effect of the use of the Numbered Head Together (NHT) model on the learning outcomes of fifth grade students in the material of spatial shapes at SDN 1 Aceh Besar. As is known, the Numbered Head Together (NHT) model is a cooperative learning model that requires students to work together in small groups in completing their learning materials. The results of fifth grade students at SDN 1 Lambheu Aceh Besar were obtained from the results of tests given at the first and last meetings. The test was in the form of pretest and posttest questions, where the pre-test was conducted before treatment was given to students in the experimental and control classes. After the pretest was conducted, treatment was given in the form of the Numbered Head Together (NHT) model to students in the experimental class, while students in the control class were given treatment in the form of a conventional model. The posttest was conducted after treatment was given to students in the experimental and control classes.

In the learning process, Numbered Heads Together (NHT) provides an opportunity for students to exchange ideas and find the most appropriate answers. In addition, it also fosters a spirit of cooperation between students and improves student understanding. This is in line with the opinion expressed by (Muliandari, 2019) that the Numbered Head Together model can help students understand and also master the concept of learning mathematics, improve the ability to cooperate between students and can improve student learning outcomes. Numbered Heads Together (NHT) functions as a forum for groups to unite their thoughts on what is proposed by the teacher, which will then be accounted for by students according to their numbers from each group.

In the first meeting, the researcher gave a pretest in the experimental class, as well as in the control class. In the second meeting, the researcher conducted learning in the experimental class by applying the Numbered Head Together model with the material of spatial figures about volume units. The researcher gave instructions to students that in this learning, all tasks in the group must be done by all members. Because, each group member will be responsible according to their respective numbers for the tasks that have been given. Learning went well in group discussions, students worked together in completing the tasks. However, there were also obstacles during the presentation, where there was a student from one of the groups whose number was indicated, it turned out to be a student who was usually less active during group discussions. So when presenting in front of the class, the student could not explain the results of the tasks that had been done. The researcher then gave the opportunity to others to help answer and also gave directions for the students to do the group discussion correctly. If there is something that is not understood, it can be discussed with other group members so that students who come forward to present not only read the answers but can explain the results that have been done.

In the third meeting, the material was continued by calculating the volume of cubes and cuboids using unit cubes. During the learning process, all students in each group played an

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active role in completing the tasks given. The presentation session also went better than in the previous meeting. In the fourth meeting, the material taught was about calculating the volume of cubes and cuboids related to problems in everyday life and the volume of combined solid shapes of cuboids and cubes. In this meeting, students were better and more enthusiastic in working together to solve the problems. At the end of the learning, the researcher provided reinforcement about the material that had been learned from the second to fourth meetings. The fifth meeting was the last meeting in this study, where the researcher gave a posttest in the experimental class and the control class.

During the learning process, it is clear that student learning outcomes have increased. It is also seen based on the average pretest and posttest scores in the experimental class, there was an increase, namely a pretest score of 45 and a posttest score of 82.5, which is also proven by the independent sample t-test with a significance (2-tailed) of 0.000 <0.05, so Ho is rejected and Ha is accepted, thus the hypothesis in this study "There is an Influence of the Numbered Head Together (NHT) Model on Student Learning Outcomes in the Material of Class V Space Buildings of SD Negeri 1 Lambheu Aceh Besar".

CONCLUSION

Based on the data analysis value on the influence of the Numbered Head Together (NHT) model on student learning outcomes in the fifth grade of SD Negeri 1 Lambheu, the results of data processing showed a significance value (2-tailed) of 0.000 <0.05. Where the decision-making criteria are Ha accepted and Ho rejected. So it can be concluded that there is a significant influence of the use of the Numbered Head Together (NHT) model on student learning outcomes in the fifth grade of SD Negeri 1 Lambheu Aceh Besar.

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